

R E M A R K S

Attention is respectfully directed to the attached Declaration under 37 C.F.R. §1.132 of Satoru Miyamoto, one of the joint applicants herein.

In response to the requirement for restriction, claims 9 - 25, drawn to nonelected inventions, have been cancelled without prejudice to their presentation in a divisional application. Applicants' provisional election is thereby affirmed.

Claims 2 and 27 have been amended to overcome the rejection under 35 U.S.C. §112, second paragraph. By the insertion of "set" after "which" at line 3 of each claim, it has been made clear that the claim is limited to only one toner, which is nevertheless one of a set of at least three toners. It is submitted that this amendment removes any ambiguity from the claims in question.

Attached hereto is a marked-up version of the changes made to the claims by the present Amendment; the marked-up version is captioned "Version with markings to show changes made." Since this Amendment does not increase either the total number of claims or the number of independent claims, no additional fee is necessary.

Claims 1 - 8 and 26 - 33 are in the application. No claim has been allowed.

With reference to the rejection of independent claims 1 and 26, and dependent claims 2, 3, 5, 7, 27, 28, 30 and 32, under 35 U.S.C. §102(e) or 103(a) as anticipated by or obvious from Karaki et al., it may initially be noted that each of the claims thus rejected is limited by the express recital (in both independent claims) "a residue of said toner being in an amount of 10 mg or less when 100 g of said toner is sieved with a 500-mesh sieve." This limitation, defining a property (amount of coarse or aggregated toner particles) of the claimed toner, is critical for the attainment of the advantageous results of the invention, as shown in Table 1 on pp. 82-83 of applicants' specification, where Examples of the invention (having a residue within the 10 mg upper

limit) and Comparative Examples (with residues of 12 - 38 mg, all above the claimed upper limit) are evaluated.

Karaki et al. does not expressly disclose this limitation, but the Examiner asserts that the toners of the Karaki et al. Examples "appear to inherently have the requisite residue of the instant claims." In fact, however, as the attached Declaration under §1.132 sets forth, the showings of Karaki et al., e.g. in the descriptions of Examples 1, 2 and 3 therein, neither expressly nor inherently meet the recital of the residue of the toner of the present invention as set forth in claims 1 and 26 of the above-identified application. The Declaration reports tests performed with toners of each of Examples 1, 2 and 3 of Karaki et al., establishing that the amount of residue for each of these Karaki et al. toners is well above the 10 mg upper limit of applicants' claimed invention, and indeed is at levels shown in applicants' Table 1 to produce markedly inferior results.

Since the critical upper limit of residue set forth in each of claims 1 and 26 is thus demonstrated not to be inherent in the teaching of Karaki et al., it is submitted that Karaki et al. does not anticipate any of the rejected claims.

In this regard, it may further be noted that the showings of the "fluidity agent" in Karaki et al. meet the recitals of "a fluidity agent" in applicants' claims 1 and 26. The "average circularity" in both Karaki et al. and the present invention indicates the overall properties of a toner. In other words, the average circularity indicates the average value of the circularities of all toner particles in the toner.

In contrast to this, the recital of "a residue . . . in an amount of 10 mg or less when 100 g of said toner is sieved with a 500-mesh sieve" in claims 1 and 26 defines the properties of a toner that contains therein a particular amount of coarse toner particles or aggregated toner particles.

The "average circularity" of a toner has nothing to do with the amount of residue resulting when 100 g of the toner is sieved with a 500-mesh sieve. As discussed above, the assertion in the

Office Action that the particle size data given by Karaki et al. establish that Examples 1 and 2 would inherently have "a residue . . . in an amount of 10 mg or less when 100 g of said toner is sieved with a 500-mesh sieve" is incorrect.

Moreover, Karaki et al. does not remotely indicate or suggest that the amount of residue of a toner when 100 g of the toner is sieved with a 500-mesh sieve is a result-effective variable. The patent, therefore, provides no motivation for a person of ordinary skill in the art to modify the disclosed toners in any way that would meet applicants' claimed upper limit of residue. It follows that the invention defined in claims 1 and 26, and in all claims dependent thereon, is not obvious from Karaki et al.; i.e., the recital of the residue limitation distinguishes each of these claims clearly and patentably over Karaki et al.

Turning to the rejection of claims 1 - 8 under §103(a) as unpatentable over Ota in view of Inaba et al. and Diamond, applicants respectfully submit that Ota likewise fails to provide any express or inherent teaching of a toner having the "residue" feature (a residue of the toner being in an amount of 10 mg or less when 100 g of the toner is sieved with a 500-mesh sieve) to which all the rejected claims are limited. The Examiner's assertion that "It appears that . . . [Ota's toners] inherently have the residue value of the instant claims" is based on inference from other parameters (volume average diameter, circularity,¹ dispersion). In fact, however, as the attached Declaration under §1.132 sets forth, the showings of Ota, e.g. in

¹ Ota (col. 3, lines 3-13) defines circularity in a way different from the present specification (p. 18, lines 7-10). Applicants' measurement of circularity is the same as in Japanese Laid-Open Patent Application 10-097095 (cited in applicants' specification, p. 4, lines 1-7), in which circularity is the ratio L_0/L , L_0 is the length of the periphery of a circle having the same area as the area of a projected image area of a particle, and L is the length of the periphery of the projected image area of the particle. In Ota, circularity is the ratio of the square root of $r_L r_s$ to r_L , and r_L and r_s are respectively the long and short radii of the toner particles. Thus, "circularity" of 0.96 in Ota's Examples 4 and 5 is not the same as "average circularity" in present claims 1 and 26.

the descriptions of Examples 4 and 5 therein, neither expressly nor inherently meet the recital of the residue of the toner of the present invention as set forth in applicants' claims 1 and 26. The Declaration reports tests performed with toners of each of Examples 4 and 5 of Ota, establishing that the amount of residue for each of these Ota toners is far above the 10 mg upper limit of applicants' claimed invention. Thus, applicants submit, the data set forth in Ota do not provide a basis for inference that the "residue" limitation of applicants' claims is necessarily inherent in the toners of Ota.

The Examiner asserts that the secondary references, in particular Diamond, make the "residue" limitation obvious if it is not inherent in Ota:

"The artisan would have found it obvious to optimize the toner's particle size distribution to as narrow a value as possible because this is known in the art to reduce dirt and optimize copy quality Such a narrow size distribution would motivate the artisan to minimize the 'residue' value of the instant claims"

Applicants respectfully submit, however, that the broad general statements in Diamond (directed to particle sizes at both, i.e., large and small, ends of a distribution range) would hardly make obvious the very specific feature of "a residue of said toner being in an amount of 10 mg or less when 100 g of said toner is sieved with a 500-mesh sieve" as recited in claims 1 and 26. Even if *prima facie* obviousness could be predicated on Diamond, taken together with Inaba et al. and Ota (which applicants do not concede), nevertheless the particular beneficial results achieved by that feature (as shown in applicants' Table 1 at pp. 82-83 of the specification), would not be obvious or expectable from the reference teachings, however combined, and are entitled to weight in determining the patentability of the claimed invention.

The same considerations are equally applicable to the rejection of the claims under §103(a) as unpatentable over Karaki et al. in view of Inaba et al. and Diamond, which are relied on as rendering obvious the "residue" limitation of the present claims if

(as the attached Declaration under §1.132 shows) that feature is not inherent in Karaki et al. But the secondary references add no more to Karaki et al. in this regard than they do to Ota.

Consequently, it is submitted that the recitals "a residue of said toner being in an amount of 10 mg or less when 100 g of said toner is sieved with a 500-mesh sieve" distinguish claims 1 and 26, and claims 2 - 8 and 27 - 33 respectively dependent thereon, clearly and patentably over Karaki et al., Ota, and any proper combinations thereof with Inaba et al. and Diamond.

For the foregoing reasons, it is believed that this application is now in condition for allowance. Favorable action thereon is accordingly courteously requested.

Respectfully,

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I hereby certify that this paper is being deposited this date with the U.S. Postal Service as first class mail addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.

Christopher C. Dunham
Christopher C. Dunham, Reg. No. 22,031
Date JUNE 26, 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 2 and 27 have been amended as follows:

2. (Amended) The toner as claimed in Claim 1, wherein said toner is one toner in a set of toners for use in a full-color electrophotography, which set comprises at least a yellow toner, a magenta toner, and a cyan toner.

27. (Amended) The rotary toner supply container as claimed in Claim 26, wherein said toner is one toner in a set of toners for use in a full-color electrophotography, which set comprises at least a yellow toner, a magenta toner, and a cyan toner.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Satoru MIYAMOTO et al.

Serial No. : 10/032,172

Group Art Unit 1753

Filed : December 21, 2001

Examiner C. RoDee

Title : TONER FOR USE IN ELECTROPHOTOGRAPHY,
IMAGE FORMATION METHOD USING THE
TONER, METHOD OF PRODUCING THE TONER,
AND APPARATUS FOR PRODUCING THE TONER

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DECLARATION UNDER 37 C.F.R. §1.132

I, SATORU MIYAMOTO, declare that:

1. I am one of the joint applicants named in the above-identified U.S. patent application, and am one of the joint inventors of the invention described and claimed therein ("the present invention").
2. I am a graduate of University of Nagoya in Japan and received the degree of Master of Physical Chemistry in the year 1990. I have been employed by Ricoh Company since 1990 as a Researcher in the field of the designing of toners and the production designing thereof.
3. I am familiar with U.S. patent No. 5,912,101 (Karaki et al.) and U.S. patent No. 5,340,803 (ota) cited in the Office Action dated March 1, 2002, in the above-identified application.
4. The showings of Karaki et al., e.g. in the descriptions of Examples 1, 2 and 3 therein, neither expressly nor inherently

meet the recital of the residue of the toner of the present invention as set forth in claims 1 and 26 of the above identified application. In order to demonstrate this, I have conducted the following comparative tests: 100 g of each of the toners in Examples 1 to 3 of Karaki et al. was sieved with a 500-mesh sieve in the same manner as in the present invention. The residues of the toners in Examples 1 to 3 were measured and the results were as follows:

<u>Example</u>	<u>Residue (mg)</u>
1	18
2	30
3	26

5. The above results indicate that the amount of each of the residues in the toners of Examples 1 to 3 of Karaki et al. is far beyond the amount of the residue of the toner of the present invention recited in claims 1 and 26 of the present application.

6. In additional comparative tests, 100 g of each of the toners in Examples 4 and 5 of Ota was sieved with a 500-mesh sieve in the same manner as the present invention. The residues of the toners in Examples 4 and 5 were measured and the results were as follows:

<u>Example</u>	<u>Residue (mg)</u>
4	85
5	135

7. The above results indicate that the amount of each of the residues in the toners of Examples 4 and 5 of Ota is also far beyond the amount of the residue of the toner of the present invention recited in claims 1 and 26 of the present application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and

belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Satoru Miyamoto
SATORU MIYAMOTO

Date: 2002. 06. 21

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